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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,824	01/31/2006	Luyin Zhao	US030252US	7881

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EXAMINER	
RUTLEDGE, AMELIA L	
ART UNIT	**PAPER NUMBER**
2176	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,824	ZHAO, LUYIN	
	Examiner	Art Unit	
	AMELIA RUTLEDGE	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/31/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the following communications: original application, filed 01/31/2006; Information Disclosure Statement, filed 01/31/2006.

2. Claims 1-21 are pending. Claims 1, 8, and 15 are independent claims.

Claim Objections

Claims 1, 8, and 15 are objected to because of the following informalities: Independent claims 1, 8, and 15 reference Fig. 5 of the drawings, however, the reference to Fig. 5 in the claim is not required.

Independent claim 8 recites "a computer readable medium", and recites "computer readable for providing a schema;" etc. In claim 8, the references to "computer readable" should be changed to "computer readable medium."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding independent claim 1, claim 1 recites *a method for validating code in a mark-up language document*, including the steps of "comparing", and "determining". As such, claim 1 is directed to a process that does not produce a physical

transformation, and claim 1 is directed to an abstract idea that does not produce a useful, concrete, and tangible result. If "the instance document contains an error section" then claim 1 produces a determination of "a probability value", and if not, no value is determined. For this reason, the method of claim 1 claims an embodiment which does not produce a useful, concrete, and tangible result and is non-statutory under 35 U.S.C. 101.

Regarding dependent claims 2-7, claims 2-7 are rejected because they add no limitations which would render the claimed subject matter statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rahm et al. ("Rahm"), "A survey of approaches to automatic schema matching", The VLDB Journal 10, copyright Springer-Verlag, published November 2001, p. 334-350, in view of Brook, U.S. Pub. No. 2002/0038320 A1, published March 2002.

Regarding independent claim 1, Rahm teaches *a method for validating code in a mark-up language document, the method comprising: providing a schema*; because Rahm teaches a schema including an XML schema, having a set of mapping elements (p. 335 col. 2 -336, col. 1, "The match operator").

Rahm teaches *providing an instance document; comparing the instance document to the schema*; because Rahm teaches matching instance data to the schema (p. 337, col. 2; Fig. 2; p. 342, col. 1-p. 343, col. 1, "Instance-level approaches").

Rahm suggests but does not explicitly teach *determining if the instance document contains an error section based upon the comparing step*; however, Brook teaches a method of parsing a markup language document, with syntactic type identification, checking for well formedness, and validation checking (par. 0210-0218).

Rahm teaches *if there is an error, determining if there are a plurality of logical sections of the schema possibly related to the error section*; because Rahm teaches matching instance data to the schema (p. 337, col. 2; Fig. 2; p. 342, col. 1-p. 343, col. 1, "Instance-level approaches"), for example based on constraint based characterization of elements. Also see Rahm, p. 343, Section 8, "Combining different matchers".

Because Rahm teaches applying constraints to elements but does not explicitly teach error checking, Rahm suggests but does not explicitly teach *determining a probability value for each of the plurality of logical sections that indicates a relationship between the error section and a respective logical section*. Brook teaches a number of correct tags in the instance document compared to the schema, and teaches dividing by the total number of tags in an "imperfect hash process" to determine probability values between logical sections of the document that can be used for error checking (par. 0244-0247; par. 0253-0260).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of parsing XML documents disclosed by Brook with

the methods of schema matching disclosed by Rahm, in order to allow a faster and less labor intensive approach by providing automated support for schema matching (Rahm, Introduction, p. 334), and since Brook was directed to streamlining tag string matching operations (par. 008) and would have provided the benefit to the schema matching algorithms disclosed by Rahm, it would have been obvious and desirable to one of ordinary skill in the art at the time of the invention to combine Rahm and Brook.

Regarding dependent claim 2, Rahm teaches wherein the schema comprises an extensible markup language (XML) schema, because Rahm teaches a schema including an XML schema, having a set of mapping elements (p. 335 col. 2 -336, col. 1, "The match operator").

Regarding dependent claim 3, Rahm teaches wherein the plurality of logical sections include sub-elements of a choice tag pair (Fig. 4).

Regarding dependent claim 4, Rahm teaches wherein the sub-elements at least two sequence groups (Fig. 4).

Regarding dependent claim 5, Rahm teaches a graphical user interface allowing interaction with a user but neither Rahm nor Brook explicitly teaches *the step of providing the probability value for each of the plurality of logical sections to a user*; however, it would have been obvious to one of ordinary skill in the art at the time of the invention to display the probability value for each of the plurality of logical sections to a user, since graphical user interfaces were commonly used in the art for the display and manipulation of all types of programmatic data by users.

Regarding dependent claim 6, Rahm suggests *the step of predicting which of the plurality of logical sections the error section should conform to based upon the probability values for each of the logical sections*, because Rahm teaches matching instance data to the schema (p. 337, col. 2; Fig. 2; p. 342, col. 1-p. 343, col. 1, "Instance-level approaches"), for example based on constraint based characterization of elements. Brook teaches a number of correct tags in the instance document compared to the schema, and teaches dividing by the total number of tags in an "imperfect hash process" to determine probability values between logical sections of the document that can be used for error checking (par. 0244-0247; par. 0253-0260).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of parsing XML documents disclosed by Brook with the methods of schema matching disclosed by Rahm, in order to allow a faster and less labor intensive approach by providing automated support for schema matching (Rahm, Introduction, p. 334), and since Brook was directed to streamlining tag string matching operations (par. 008) and would have provided the benefit to the schema matching algorithms disclosed by Rahm, it would have been obvious and desirable to one of ordinary skill in the art at the time of the invention to combine Rahm and Brook.

Regarding dependent claim 7, while Rahm does not explicitly teach *wherein the probability value for each of the plurality of logical sections is based upon a number of correct tags that appear in the error section as compared to a respective logical section of the schema divided by a total number of tags within the respective logical section*, Brook teaches the limitations of claim 7, because Brook teaches that a single or

multiple set of numerical comparisons between a tag set from the parsed and hashed input document and a tag set from the parsed and hashed DTS replaces a series of string and structure comparisons normally required in XML parser validation, and further teaches a number of correct tags in the instance document compared to the schema, and teaches dividing by the total number of tags in an "imperfect hash process" (par. 0244-0247; par. 0253-0260).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of parsing XML documents disclosed by Brook with the methods of schema matching disclosed by Rahm, in order to allow a faster and less labor intensive approach by providing automated support for schema matching (Rahm, Introduction, p. 334), and since Brook was directed to streamlining tag string matching operations (par. 008) and would have provided the benefit to the schema matching algorithms disclosed by Rahm, it would have been obvious and desirable to one of ordinary skill in the art at the time of the invention to combine Rahm and Brook.

Regarding independent claim 8 and dependent claims 9-14, claims 8-14 are directed to the computer readable medium storing a computer program for implementing the methods claimed in claims 1-7, and are rejected along the same rationale.

Regarding independent claim 15 and dependent claims 16-21, claims 15-21 are directed to the device for validating code in a mark-up language document, implementing the methods claimed in claims 1-7, and are rejected along the same rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al. U.S. Pub. No. 2002/0169788 A1 published November 2002

Alumbaugh et al. U.S. Pub. No. 2003/0172368 A1 published September 2003

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMELIA RUTLEDGE whose telephone number is (571)272-7508. The examiner can normally be reached on Monday - Friday 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on 571-272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amelia Rutledge/
Examiner, Art Unit 2176